Trend Study 1-19-01

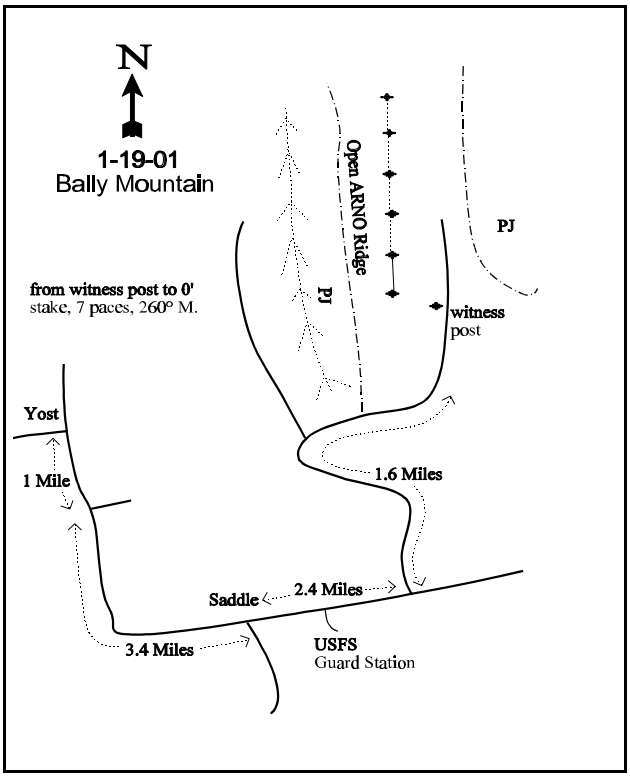
Study site name: Bally Mountain . Vegetation type: Black Sagebrush .

Compass bearing: frequency baseline 0 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From the yield sign east of the town of Yost, travel south and then west towards Bally Mountain for 1.0 miles. Stay right and continue for 3.4 miles. Stay left and travel 2.4 miles. Take a left and continue 1.6 miles to a witness post. From the witness post to the 0 foot stake, walk 7 paces at 260 degrees magnetic. The baseline runs 0 degrees magnetic.



Map Name: Standrod

Diagrammatic Sketch

Township 15N , Range 25E , Section 4

UTM 4649407 N, 296607 E

DISCUSSION

Trend Study No. 1-19

The Bally Mountain trend study samples a open west facing ridge top surrounded by pinyon, juniper and curlleaf mountain mahogany. Slope of the ridge is 20% to 25% with an elevation of approximately 7,160 feet. Deer concentrate here during the winter because the slope remains open. Cattle also graze the area and a trail runs through the site. This area is within the Sawtooth National Forest. It is in the combined Raft River\Yost Pastures allotment which is grazed by 1,418 cattle in the spring and fall. A pellet-group transect read on the site in 2001 estimates 6 deer days use/acre (15 deer days use/ha) and 10 cow days use/acre (25 cow days use/ha).

Soil depth is limited to an effective rooting depth (see methods) of about 13 inches. The soil texture is a clay loam with a soil reaction that is mildly alkaline (7.7 pH). Percent organic matter is one of the highest found within the management unit (5%). The amount of phosphorus in the soil is low at only 6 ppm. Values less than 10 ppm can limit normal plant growth and development. The soil profile is rocky throughout with mostly gravel and some cobble size rocks. On average, rock and pavement has a cover value of a little over 15% with around 7% bare soil. Due to the abundant vegetation and litter cover, erosion is not a serious problem. The erosion condition class was determined to be stable in 2001.

This open ridge is dominated by a low growing population of black sagebrush. Density averages 25,710 plants/acre in 1996 and 2001 with 82% classified as mature. The average mature plant measures only 6 inches high with a 12 inch crown. Utilization was mostly moderate in 1996, but currently it is almost entirely classified as light use. Vigor is good on all plants except 16% of the decadent shrubs which were classified as dying. Seedlings and especially young are numerous, yet the population will likely not expand much further due to the very high density and increasing intraspecific competition. Annual leader growth averaged .7 inches in 2001. The average growth for black sagebrush on this site was 14% lower than the average for the management unit. Additional forage is provided by a few scattered mountain big sagebrush, curlleaf mountain mahogany, and rubber rabbitbrush.

The next most abundant shrub consist of broom snakeweed which numbered about 19,520 plants/acre in 1996. Density declined 43% in 2001. These are small plants, dwarfed by the harshness of the site and measure, on average, only 3 inches high by 5 inches across. Age class analysis indicated a dynamic reproductive potential in 1996. However, broom snakeweed did not increase and will likely not increase much in the future due to the harshness of the site and the relatively high density of black sagebrush.

The herbaceous understory is relatively well developed for a black sagebrush site. Five perennial grasses combined to produce 12% cover in 1996 increasing to 23% in 2001. Slender wheatgrass, Sandberg bluegrass, and prairie junegrass provide 99% of the total grass cover. Forbs are diverse and abundant. However, most of the common forbs are low value, low growing species which includes: stemless goldenweed, desert phlox, and dandelion.

1996 APPARENT TREND ASSESSMENT

Protective ground cover is adequate to prevent most soil erosion on this site. Black sagebrush is abundant with adequate numbers of seedlings and young to maintain the population. Browse trend appears stable. The herbaceous understory is diverse and in good condition for this vegetation type. Some useful forbs are found, but the majority are low value forage species.

2001 TREND ASSESSMENT

Protective ground cover is good and prevents most soil erosion on this site. The ratio of bare soil to protective cover has remained almost unchanged since 1996, therefor the trend for soil is stable. Black sagebrush is abundant with adequate numbers of seedlings and young to maintain the population. Browse trend is stable. The herbaceous understory is diverse and in good condition for this vegetation type. Since 1996, the sum of nested frequency values for the grasses has remained almost the same, however the value for forbs has decreased somewhat. However, most of the forbs are small and of little forage value. Trend overall would be considered stable.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - stable (3)

HERBACEOUS TRENDS --
Herd unit 01 , Study no: 19

Type	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'96	'01	'96	'01	'96	'01
G	Agropyron trachycaulum	334	*367	97	98	6.34	16.36
G	Bromus tectorum (a)	3	8	1	2	.00	.01
G	Koeleria cristata	64	*100	24	31	1.12	2.23
G	Oryzopsis hymenoides	14	*-	6	-	.25	-
G	Poa secunda	301	*259	89	86	4.57	4.67
G	Sitanion hystrix	2	-	1	-	.00	-
Total for Annual Grasses		3	8	1	2	0.00	0.00
Total for Perennial Grasses		715	726	217	215	12.30	23.27
Total for Grasses		718	734	218	217	12.31	23.28
F	Achillea millefolium	4	4	2	2	.03	.15
F	Agoseris glauca	2	*8	1	4	.00	.04
F	Antennaria rosea	6	10	3	5	.06	.05
F	Arabis spp.	37	*10	16	7	.08	.03
F	Arenaria fendleri	160	*84	55	37	.97	.38
F	Astragalus calycosus	117	*51	51	23	1.52	.27
F	Aster spp.	24	*6	8	2	.06	.15
F	Castilleja angustifolia	11	*17	5	12	.02	.33
F	Castilleja linariaefolia	36	*55	19	28	.17	.51
F	Chenopodium fremontii (a)	-	3	-	1	-	.00
F	Cirsium spp.	3	4	2	2	.01	.01
F	Comandra pallida	2	6	1	2	.00	.01
F	Collinsia parviflora (a)	275	293	77	81	1.78	2.56

Type	Species	Nested Frequency '96	Nested Frequency '01	Quadrat Frequency '96	Quadrat Frequency '01	Average Cover % '96	Average Cover % '01
F	Cordylanthus ramosus (a)	7	-	3	-	.01	-
F	Crepis intermedia	2	-	1	-	.00	-
F	Cryptantha spp.	21	*-	11	-	.13	-
F	Cymopterus spp.	4	-	1	-	.00	-
F	Erigeron pumilus	54	*24	27	15	.26	.07
F	Haplopappus acaulis	88	*50	35	27	2.61	.75
F	Lappula occidentalis (a)	30	*1	11	1	.20	.00
F	Lesquerella spp.	4	11	1	5	.00	.02
F	Linum lewisii	55	*6	18	3	.26	.04
F	Lomatium spp.	5	7	2	4	.03	.02
F	Machaeranthera spp	4	-	1	-	.00	-
F	Microsteris gracilis (a)	-	4	-	1	-	.00
F	Penstemon spp.	2	-	1	-	.00	-
F	Phlox austromontana	238	*183	79	72	5.08	3.70
F	Phlox longifolia	-	6	-	3	-	.01
F	Ranunculus testiculatus (a)	13	*19	4	9	.16	.19
F	Senecio multilobatus	48	*25	25	13	.28	.14
F	Taraxacum officinale	92	69	44	35	.50	.64
F	Tragopogon dubius	18	*6	7	2	.06	.03
F	Viola spp.	-	3	-	1	-	.00
Total for Annual Forbs		325	320	95	93	2.16	2.77
Total for Perennial Forbs		1037	645	416	304	12.22	7.41
Total for Forbs		1362	965	511	397	14.39	10.18

* Indicates significant difference at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --
Herd unit 01 , Study no: 19

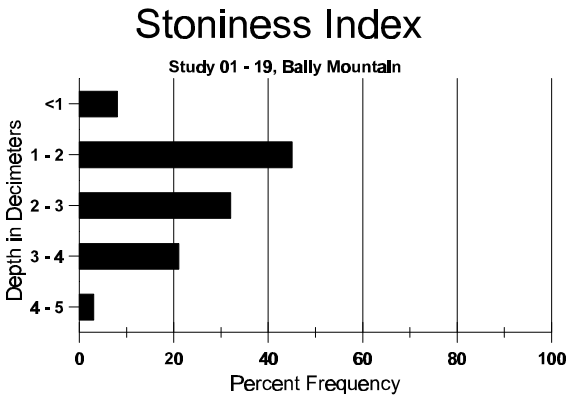
Type	Species	Strip Frequency '96	Strip Frequency '01	Average Cover % '96	Average Cover % '01
B	Artemisia nova	100	100	14.38	17.74
B	Artemisia tridentata vaseyana	1	2	-	-
B	Cercocarpus ledifolius	1	1	-	-
B	Chrysothamnus nauseosus consimilis	24	24	.82	1.19
B	Chrysothamnus viscidiflorus stenophyllus	1	1	-	-
B	Eriogonum microthecum	15	21	.01	.04
B	Gutierrezia sarothrae	98	86	3.24	1.33
B	Pediocactus simpsonii	4	0	.01	-
B	Pinus monophylla	2	1	-	-
B	Tetradymia canescens	1	1	-	-
Total for Browse		247	237	18.48	20.31

BASIC COVER --
Herd unit 01 , Study no: 19

Cover Type	Nested Frequency '96	Nested Frequency '01	Average Cover % '96	Average Cover % '01
Vegetation	463	472	44.50	63.04
Rock	316	130	6.55	1.45
Pavement	391	362	11.31	11.48
Litter	483	417	29.17	23.38
Cryptogams	233	138	2.90	2.75
Bare Ground	281	287	5.23	9.27

SOIL ANALYSIS DATA --
Herd Unit 01, Study no: 19, Bally Mountain

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
13.4	52.6 (14.5)	7.8	26.7	42.0	31.3	5.0	6.0	297.6	.7



PELLET GROUP FREQUENCY --
Herd unit 01 , Study no: 19

Type	Quadrat Frequency '96	Quadrat Frequency '01	Pellet Transect: Pellet Groups per Acre '01	Pellet Transect: Days Use per Acre (ha) '01
Rabbit	2	1	9	N/A
Deer	13	2	78	6 (15)
Cattle	3	2	122	10 (25)

BROWSE CHARACTERISTICS --
Herd unit 01 , Study no: 19

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia frigida																		
M	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	5	10	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor
'96	00%	00%	00%
'01	00%	00%	00%

%Change

Total Plants/Acre (excluding Dead & Seedlings)				
'96	0	Dec:	-
'01	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia nova																		
S	96	19	-	-	-	-	-	-	-	-	19	-	-	-	380			19
	01	9	-	-	-	-	-	-	-	-	9	-	-	-	180			9
Y	96	204	44	-	7	-	-	-	-	-	255	-	-	-	5100			255
	01	85	-	-	-	-	-	-	-	-	85	-	-	-	1700			85
M	96	48	934	38	-	-	-	-	-	-	1020	-	-	-	20400	5	15	1020
	01	1036	35	-	-	-	-	-	-	-	1071	-	-	-	21420	6	12	1071
D	96	8	32	7	5	-	-	-	-	-	41	-	-	11	1040			52
	01	88	-	-	-	-	-	-	-	-	74	-	-	14	1760			88
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	380			19
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	240			12

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	76%	03%	.82%	- 6%
'01	03%	00%	01%	

Total Plants/Acre (excluding Dead & Seedlings)				
'96	26540	Dec:		4%
'01	24880			7%

Artemisia tridentata vaseyana																		
Y	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	8	19	0
	01	2	-	-	-	-	-	-	-	-	2	-	-	-	40	9	19	2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	00%	00%	00%	+50%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'96	20	Dec:		-
'01	40			-

Cercocarpus ledifolius																		
Y	96	-	-	1	-	-	-	-	-	-	1	-	-	-	20			1
	01	-	1	-	-	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	00%	100%	00%	+ 0%
'01	100%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'96	20	Dec:		-
'01	20			-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus nauseosus consimilis																		
Y	96	4	3	-	-	-	-	-	-	-	7	-	-	-	140			7
	01	12	-	-	-	-	-	-	-	-	12	-	-	-	240			12
M	96	12	7	-	-	-	-	-	-	-	19	-	-	-	380	17	24	19
	01	10	-	-	-	-	-	-	-	-	10	-	-	-	200	19	24	10
D	96	1	-	4	-	-	-	-	-	-	3	-	-	2	100			5
	01	14	-	-	-	-	-	-	-	-	7	-	1	6	280			14
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	32%	13%	06%	+14%
'01	00%	00%	19%	

Total Plants/Acre (excluding Dead & Seedlings)				
'96	620	Dec:		16%
'01	720			39%

Chrysothamnus nauseosus hololeucus																		
M	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	11	7	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	00%	00%	00%	
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			
'96	0	Dec:	-
'01	0		-

Chrysothamnus viscidiflorus stenophyllus																		
S	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20	6	10	1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	00%	00%	00%	+ 0%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			
'96	20	Dec:	0%
'01	20		100%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Eriogonum microthecum																		
Y	96	8	-	-	-	-	-	-	-	-	8	-	-	-	160			8
	01	10	-	-	-	-	-	-	-	-	10	-	-	-	200			10
M	96	11	5	-	1	-	-	-	-	-	17	-	-	-	340	6	10	17
	01	33	-	-	6	-	-	-	-	-	39	-	-	-	780	6	10	39
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor									%Change			
'96		20%		00%		00%									+49%			
'01		00%		00%		00%												
Total Plants/Acre (excluding Dead & Seedlings)													'96		500	Dec:		-
													'01		980			-
Gutierrezia sarothrae																		
S	96	57	-	-	1	-	-	-	-	-	58	-	-	-	1160			58
	01	17	-	-	-	-	-	-	-	-	17	-	-	-	340			17
Y	96	258	-	-	19	-	-	-	-	-	277	-	-	-	5540			277
	01	64	-	-	2	-	-	-	-	-	66	-	-	-	1320			66
M	96	675	-	-	3	-	-	-	-	-	678	-	-	-	13560	3	4	678
	01	470	-	-	-	-	-	-	-	-	470	-	-	-	9400	3	5	470
D	96	21	-	-	-	-	-	-	-	-	16	-	-	5	420			21
	01	17	-	-	1	-	-	-	-	-	8	-	1	9	360			18
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	340			17
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor									%Change			
'96		00%		00%		.51%									-43%			
'01		00%		00%		02%												
Total Plants/Acre (excluding Dead & Seedlings)													'96		19520	Dec:		2%
													'01		11080			3%
Pediocactus simpsonii																		
M	96	1	-	-	3	-	-	-	-	-	4	-	-	-	80	1	2	4
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor									%Change			
'96		00%		00%		00%												
'01		00%		00%		00%												
Total Plants/Acre (excluding Dead & Seedlings)													'96		80	Dec:		-
													'01		0			-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Pinus monophylla																		
S	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	01	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	00%	00%	00%	-50%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'96	40	Dec:	-
	'01	20		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Tetradymia canescens																		
M	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20	11	17	1
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20	14	20	1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'96	00%	00%	00%	+ 0%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'96	20	Dec:	-
	'01	20		-